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A PRELIMINARY LIST OF THE BIRDS OF SAN JOSÉ, COSTA RICA.

BY GEORGE K. CHERRIE.

THE following list will contain the birds found in the immediate vicinity of the city, and principally only such as I have taken myself and are represented in my own collection or that of the Museo Nacional.

Doubtless many more birds will yet be recorded, especially among the migrants, and even among the resident birds, because at a very little greater distance from the city many varieties are found that are not given in the list. At the most, I think the area covered does not exceed a radius of two miles.

The city of San José is located at 9 degrees 56 minutes North Latitude, and 84 degrees 8 minutes West Longitude, at an altitude of about 1135 metres. On the north the city is bounded by the River Torres, and on the south by the River Maria Alguilar.

The seasons are well marked, the rainy season commencing in the latter part of May and lasting until the latter part of November.

About the city the country is rather level, and there is comparatively little timber or brush wood; this being found along the sides of the river. There is considerable open pasture-land, and the remainder of the ground is occupied almost exclusively by coffee plantations. Many of these coffee plantations have jocote, aguacote, anona, and other fruit trees planted here and there. These fruit trees are very productive of bird life, the absence or presence, the appearance and disappearance of many species depending on the supply of fruit.

Bird life generally is far more abundant during the rainy season than during the dry season. At the end of the latter season vegetation is parched and dry. There are no fruits and insect life is not abundant. The breeding season commences with the awakening into life of the insect world and the bursting forth into fruit and flower at the beginning of the rainy season. This is speaking generally, as I believe some few species may be found nesting every month in the year.

Perhaps the greatest number of varieties are found moulting during July, August and September, but, as in the case of nest-

ing, some are moulting at all times and at all seasons. The North American migrants are usually in good plumage, although young birds in immature plumage seem to predominate in point of numbers.

Quite a variety of the North American species that are tolerably common at the time of their arrival from the north, disappear from the vicinity of the city at the close of the rainy season, and at the time of their departure on their return journey north, are only found at lower altitudes where food of all kinds is more abundant.

Of the 162 species included in the San José fauna 89 are North American. Since the publication of my list of North American birds at San José, Costa Rica (Auk, Vol. VII, p. 331), I have added the following:— *Dendroica cærulea*, *Falco columbarius*, *Urubitinga anthracina*, *Myiodynastes luteiventris*.

The entire fauna is composed of 29 Nearctic species, 60 Neogean; 30 autochthonous (of the 39 autochthonous species, 4 are peculiar to Costa Rica), and 34 Neotropical.

The nomenclature and classification here followed is that of Zélédon's list of Costa Rican birds (Anales del Museo Nacional de Costa Rica, Vol. I, 1887).

The list contains some notes on habits and nidification, and also descriptions of the plumage of young birds.

1. **Catharus melpomene.** The Central American Thrush-Robin, known here under the native name of 'Inglicito,' little Englishman, is quite common about the city, but owing to its very shy and retiring disposition, it is known to many by its song only. The song is heard occasionally throughout the entire year, but at its best, and almost continuously during the months of February, March and April, — just before and at the beginning of the breeding season. To pour forth their melody they usually choose a seat at the side of and well toward the top of one of the thick hedge fences surrounding the fields. There, with head thrown well back and wings drooping they will trill for hours, if not disturbed, but at the first approach of danger the singer is gone, — down through the hedge and away on the other side, where in a short time he will be heard as joyously as ever.

After the nesting season has well begun they are less often seen and seldom heard. Often when collecting I have heard a slight rustling of leaves at my side, when if I stopped and stooped down and examined closely the hedge row, I would probably see an 'Inglicito' perched within a few inches of the ground, sitting perfectly quiet watching me, or it would flit quietly and quickly from that point out of sight, all the time keeping well concealed from view.

They feed I believe entirely on the ground, scratching among the dead leaves for beetles, grubs, etc.

Nesting commences the latter part of April and lasts until the latter part of July, and even as late as August 20 I noted one feeding a young Cowbird (*Calothrus robustus*), — the Cowbird apparently full grown and considerably larger than its foster mother.

I have only had opportunity to examine two nests and sets of eggs, although from the fact that I have secured many young birds just from the nest I am sure they breed quite abundantly. Both sets of eggs were taken April 28, 1889. The first (No. 553, Geo. K. Cherrie Collection) was placed about six feet from the ground, in a coffee tree that stood some 18 feet from the river bank. It was constructed of green moss, evidently taken from some very damp place, a few large twigs, decaying half rotten leaves from the river-bottom, and a little soft dry grass. It was lined with rootlets. The nest although not well concealed by leaves was not readily noticeable owing to the green moss used in the construction.

The nest contained two eggs, but one was unfortunately broken. The remaining egg is slightly glossy, pea green in color, speckled all over, very densely at the larger end, with cinnamon. It measured .92 X .67.

The second nest (No. 544, Geo. K. Cherrie Collection) was situated in low bushes on the river bank, about three feet from the ground, admirably hidden by leaves. It is hardly as large as No. 553; there are fewer rotten leaves, less green moss, and more soft dry grass used in the construction. It has the same sort of lining of rootlets.

The eggs, two in number, are ovate in form, ground color pea-green, thickly speckled with spots varying from pale cinnamon to Prout's brown. The eggs measure .92 X .68, and .92 X .68.

The female while sitting on the eggs will allow no one to approach very near before leaving the nest, finally slipping off into the brush and out of sight without uttering a note.

In the 'Biologia Centrali-Americana' the eggs are stated to be "white thickly marked with rufous red,"—decidedly different from the eggs I have taken.

Below I will give a description of two young birds brought to the Museum, July 30, 1890, birds evidently just about ready to leave the nest. I endeavored to keep the birds alive but they died the next morning. They may be described as follows: Above dusky dark brown, darkest on the head, where there are no markings, and lightest on the rump where there is a decided cinnamon shading; feathers of back and scapulars with apical, tawny olive shaft streaks; middle and lesser wing-coverts marked the same way, but terminal spots larger; primaries dusky faintly edged with raw umber. Greater coverts and secondaries broadly margined on outer webs with a light mars-brown. Below, throat and upper breast spotted, the tips of the feathers all being dusky, then crossed by a broad buffy whitish band, the bases of all the feathers dusky; sides similar but darker; belly soiled buffy whitish; under-tail coverts ochraceous (at this age

reaching to the end of the tail). Eye dark, bill black, yellowish at the rictus only; legs and feet yellowish; front of tarsus and tops of the toes shaded with dusky.

2. *Turdus fuscescens*.

3. *Turdus ustulatus swainsonii*. — No notes have been added on these two species since the publication of the author's list of North American birds at San José. (See Auk, VII, p. .)

4. *Merula grayi*. — Gray's Thrush, or the 'Yigüirro' of the Costa Ricans, is one of the most abundant resident birds about the city. It breeds abundantly, the nesting season commencing about April 1, and lasting until nearly the middle of August. I have secured young birds from the nest as early as June 1. Two or three broods seem to be reared each season. Just previous to the beginning of and during the early weeks of the nesting season the Yigüirro is in full song. With the exception of this short period it has seemed to me to be rather a quiet bird, although gregarious in its habits. During the rainy season the chief food is the fruit of the species of wild figs (*Ficus*), and while they are frequently found in considerable numbers in these trees they are not noisy, and often my first intimation of their presence has been on hearing their sudden precipitous flight through the leaves and out of the tree. At such times they utter a sharp, rather disagreeable note.

A Mr. Echandia tells me that one he has in a cage frequently sings late at night, especially if disturbed or if the mosquitoes are very troublesome.

At all seasons Gray's Thrush is much sought after as a game bird, consequently they are decidedly shy.

The nest and eggs of this species vary considerably as will be shown by the description of three nests and sets of eggs in the author's collection. No. 1579, San José, June 24, 1890; three slightly incubated eggs. The eggs are a pale glaucous green, speckled and spotted all over with shades of brown between burnt umber and pale chestnut. On the larger end the ground color is almost entirely concealed. The larger spots are almost all irregular in form but present an approach to an ellipse. The eggs are ovate slightly elongated, and measure as follows:— $1.22 \times .80$; $1.20 \times .81$; and $1.20 \times .78$.

No. 1580, San José, July 1, 1890; two eggs and nest. The nest was placed in a small tree, about ten feet from the ground. It is composed outwardly of half rotten grass stems and leaves mixed with mud; the lining is rather coarse rootlets. Outside it measures 5.50 by 4.50 by 3 deep; inside 3.25 by 3.75 by 1.75 deep.

The eggs are rather under average size and one is much smaller than the other. The larger is ovate and the smaller short ovate. In the larger incubation had somewhat advanced while the smaller was perfectly fresh. The ground color is glaucous green; the markings consist of small dots of several shades of brown, pale chestnut predominating. The dots are aggregated mostly about the larger end, but the ground color is no where concealed.

No. 1581, San José, June 25, 1890; two eggs and nest. The nest was

about five feet from the ground, in a shrub growing by the river bank, and was constructed externally entirely of rootlets and dry grass stems, only a very little mud being mixed with them. The measurements taken from the nest are, 5.50 by 4, 2.50 deep outside. Inside 3.25 by 3, 1.75 deep.

The two eggs measure $1.12 \times .82$ and $1.13 \times .83$. On the last the spots of brown are larger and more scattered, showing more of the pale glaucous green brown. On the first the spots are smaller and thicker, the ground color darker and about the larger end almost completely hidden.

5. *Thryophilus modestus*. — Of the two Wrens found in San José, the 'Chinchirigüi' is by far the most common and decidedly the noisiest, inhabiting the hedge rows where their noisy, suspicious chatter and restless motions are sure to attract the attention of the passer by, although a glimpse will be seen here and there of the bird. The song is loud, clear and piercing. The common name is derived from a supposed imitation of the notes of the song. It is pronounced *cheen-che-ree-gré*, with a strong accent on the last syllable. These notes are repeated over and over very rapidly. There seems to be no particular time or place for singing; they are always ready.

The nesting season lasts from early April to late in August. I have taken young birds just from the nest by May 5, and as late as August 25. I have searched diligently for the nest of this species, but thus far have not succeeded in finding one.

Young birds just beginning to fly are intermediate in coloration between adult *T. zeledoni*, and *T. modestus*. Above, brownish slate like *zeledoni*, but having a shading of umber brown instead of olive. Below breast and belly white; sides, flanks and crissum ochraceous buff. In the adult bird the eye is chestnut; in the young, slate gray; feet and tarsi plumbeous. As the bird grows older, the ochraceous deepens and extends forward much further than in the adult bird, even encroaching on the sides of the breast; centre of the breast and belly ochraceous buff.

The parent birds and young remain in company until the young are fully grown. I have frequently come upon these family parties and secured them all. The two old birds will make a great noise and try in every way to attract attention. But the young crouch close to their perch and will scarcely stir even when one is within three or four feet of them, searching for them.

6. *Troglodytes intermedius*. — The Central American House Wren, or 'Zoterré' of the natives, while not nearly as common or as noisy as the last is better known, not being so shy, besides having a habit of nesting in small boxes prepared for them in the manner of the common House Wren *T. ædon*. Its habits in general are very like those of the House Wren, seeming, however, to prefer being close to the ground at all times. The song, however, is not apparently as strong as in that species.

Nesting begins in the latter part of January or early in February, as I have taken young birds fully grown by February 15, and birds just from the nest as late as June 23. While I have not taken any eggs myself I have noted the birds constructing their nests in deserted Woodpecker holes and

other convenient places, usually from three to eight feet from the ground. On June 16, 1889, I observed a pair carrying nesting material into the brain cavity of an ox skull. The skull was in the branches of a small tree about four feet from the ground, the Wren entered at the foramen magnum. At another time I observed a pair nesting in a hole in the ground in the bank of a small creek.

A nest and set of three eggs collected by Señor Don Anastasio Alfaro (No. 30, Museo Nacional, El Arroyo Allejuela, May 20 1889) was placed in the walls of that gentleman's house. The nest was constructed similarly to a nest of *T. aëdon*, there being first a great bulk of rather coarse dry twigs; inside of this a lining of soft grass stems and horse hair, finished with soft chicken feathers and three pieces of cast off snake skin. The eggs are short, ovate, pinkish white in color thickly speckled with bright chocolate brown, the speckling thickest near the larger end. The eggs measure .65X.52; .65X.52, and 63.X.52. Señor Alfaro states that this bird was employed fifteen days in building the nest and depositing the three eggs. The bird was very confiding and would perch at the mouth of the nest and sing, while he (Alfaro) was standing within a yard of the nest.

A second nest and eggs taken by Señor Alfaro (No. 33, Museo Nacional, Tambor Alejuela, May 20, 1888) contained five eggs, one of which was broken. This nest, like the last, is lined with soft feathers and a few bits of cast off snake skin. Señor Alfaro assures me that he has examined many nests of this species and that all contain bits of snake skin,—rather a peculiar feature.

The eggs are pinkish white, thickly speckled with bright chocolate. In three of them the distribution of the spots is pretty uniform, while in the other they are aggregated in a band about the larger end, so as to conceal the ground color. They are short ovate and measure .70X.54; .72X.53; .68X.53, and .69X.53.

In a series of 22 examples of this species now before me, representing different ages and seasons, I find considerable variation in color.

Male (No. 37), above reddish brown (sepia), a little brighter on rump and upper tail-coverts, very obsoletely banded with darker. Wings and tail dusky, banded with black and the color of the back, the black bands being the narrower. Upper tail-coverts distinctly banded with black. Feathers of the rump with concealed subterminal black bands preceded by a white spot. An obscure line over the eye, lores, and a ring about the eye a brownish buff. Auriculars buff, edged with the color of the back, Below, throat and middle of the belly brownish buff; throat paler. Sides Isabella color; flanks darker, indistinctly barred with dusky; crissum and under tail-coverts buffish white barred with blackish.

Female (No. 3151), darker above than the male. The concealed subterminal black bands and white spots on the feathers of the rump are almost obsolete. The light bands on the wing are not nearly as dark as the back. Below similar to the male.

Young birds are much darker. A young male (No. 645, Geo. K. Cherrrie Collection) is dark bistre brown, wings and tail dusky blackish. The obsolete banding with black on the back is more apparent. The bands on

the upper tail-coverts are entirely obsolete and the brown bands on the wings are much paler than the color of the back. Wing-coverts distinctly banded with black. Concealed markings of rump feathers almost obsolete. Below slightly darker than adult with wavy lines across the throat, breast, and belly, produced by a very narrow terminal band to the feathers. Flanks and crissum dark Isabella color without bands. Female similar.

As the birds grow older the wavy lines below grow fainter. The crissum becomes lighter and is banded with dusky. The dark banding on the wing-coverts grows fainter while that on the upper tail-coverts becomes distinct.

No. 4577 and No. 4579 have the flanks very distinctly barred with dusky, the brown bands on the wings are much paler than the brown of the back, and are but little wider than the black bands. The wing-coverts are distinctly barred.

Below I present a table of measurements of the specimens in the collection of the Museo Nacional, together with four from my own private collection.

MEASUREMENTS OF *T. INTERMEDIUS*.

No. de Mus. Nac.	Collector's No.	Collector.	Locality.	When Collected.	Wing.	Tail.	Tail Feathers.	Exposed Culmen.	Bill from Nostril.	Tarsus.
2194		A. Alfaro,	San José,	Nov. 5, '87	2.00	1.69	1.41	.49	.37	.74
2461			Naranjo de Cartago,	June , '89	1.97	1.66	1.42	.47	.37	.72
2735		G. K. Cherrie,	San José,	Feb. 24, '89	1.98	1.65	1.40	.49	.37	.68
2736		"	"	Feb. 24, '89	1.95	1.52	1.28	.40	.30	.72
3070		A. Alfaro,	Alajuela,	July 8, '89	2.11	1.73	1.54	.50	.37	.71
3151		"	"	July 25, '89	2.03	1.73	1.48	.51	.40	.71
3152		"	"	July 22, '89	1.94	1.42	1.22	.52	.40	.70
3531		"	"	July 31, '89	1.68	.98	.68	.31	.24	.70
4575	542	C. F. Underwood,	San José,	Dec. 14, '89	1.87	1.62	1.34	.50	.38	.65
4576	534	"	"	Dec. 4, '89	2.00	1.55	1.33	.50	.40	.70
4577	576	"	"	Dec. 21, '89	2.13	1.74	1.50	.51	.41	.72
4578	1095	"	Juan Vías,	May 4, '90	1.96	1.65	1.40	.41	.32	.68
4579	1092	"	"	May 4, '90	2.08	1.67	1.43	.50	.40	.70
4580	1094	"	"	May 4, '90	1.95	1.56	1.21	.50	.38	.69
4581	1084	"	"	May 3, '90	2.00	1.70	1.45	.48	.40	.72
4934		A. Alfaro,	Alajuela,	Oct. 3, '89	1.90	1.43	1.30	.50	.40	.68
4971		"	San José,	June 15, '90	2.00	1.73	1.47	.49	.38	.69
5188		G. K. Cherrie,	"	Sept. 10, '90	1.92	1.66	1.30	.49	.38	.72
	645	"	"	June 7, '89	1.92	1.45	1.20	.44	.32	.71
	668	"	"	June 23, '89	1.88	1.73	1.38	.43	.32	.70
	727	"	La Sabanilla,							
			Alajuela,	July 15, '89	1.92	1.62	1.41	.50	.40	.72
	762	"	San José,	Aug. 5, '89	1.94	1.65	1.35	.50	.39	.70

7. *Mniotilta varia*. — The first arrival this year was a young male on August 20, the same date as the first arrival in 1889; the second was noted September 3.

In a series of 25 Black-and-white Warblers before me, almost all are birds of the year. There is not one in fully adult plumage and many are decidedly buffy on crissum and sides.

8. *Protonotaria citrea*.—No fall migrants were noted.

9. *Helminthophila peregrina*. Recorded the first this fall, October 20. In a series of 15 Tennessee Warblers, taken from the beginning of September to the beginning of March, there is not one that is not more or less strongly tinged with greenish yellow, very different from the breeding bird found in the United States.

10. *Helminthophila chrysoptera*.—The first noted this year, a female, taken October 2, is a rather abnormal bird, being as brightly colored as any spring male. Birds taken here have usually more or less olive green shading on the back.

11. *Helmitherus vermivorus*.—November 23, 1890, I took a fine male specimen, the first and only Worm-eating Warbler I have taken in Costa Rica.

12. *Dendroica virens*.—The Black-throated Green Warbler may, I think, be considered as rather a rare bird in Costa Rica, there being only three Costa Rican examples in the Museo Nacional. These three, although the sex is not indicated on the labels, are evidently females, having the throat yellow and the black of the breast with whitish tips to the feathers. I have not myself met with this bird.

13. *Dendroica coronata*.—There are only two Yellow-rumped Warblers in the Museum collection. A male taken Feb. 15, 1889, is similar to an adult female from the vicinity of Washington, D. C., but has a triangular ashy blue patch with black streaks in the centre of the back. There are a few black feathers in the auriculars, and a few scattered in the sides of the crown. Below the yellow of the sides of the breast is very pale. The white throat is tinged with light buffy brownish. There are only a few black feathers in the breast (these are tipped with white), and a few with black shaft streaks.

14. *Dendroica blackburniæ*.—First arrivals were noted August 17, 1890, and the second August 20, from which time they were common until the first of October, when they were very abundant and remained so until the 7th, when all disappeared. The first arrivals were nearly a month earlier than in the fall of 1889.

In a series of 50 Blackburnian Warblers taken chiefly in the vicinity of San José there is not one in adult plumage. Perhaps the brightest bird in the collection is a female, taken by the author October 3, 1890, with throat and breast rich cadmium orange, but the white wing-patch is replaced by the two wing-bars of the young bird, and there is considerable grayish brown in the upper plumage. While there are a few males and females like the one described above, the bulk are very much paler, ranging from the bright cadmium orange to a pale yellowish buff on the throat and the breast, with the crown patch almost obsolete, the back and streaks on the sides dusky brownish.

15. *Dendroica pennsylvanica*.—In a series of 40 Chestnut-sided War-

blers now before me, 11 show the chestnut stripe on the sides; in 6 of these, however, it is only faintly indicated. One of the 40 has the yellow crown of the adult; all have the wing-bands strongly tinged with sulphur yellow, and almost all are bright olive green above.

The first arrival for the fall of 1890 was September 21.

16. *Dendroica æstiva*.—I have before me 32 males and 15 female Yellow Warblers, including specimens from both the Atlantic and Pacific sides of the country, but the majority are from the vicinity of San José. I believe all are true *æstiva*, although the difference between birds from the extremes of the series is very great. Eight of the 32 males have the chest and sides more or less streaked with chestnut. From a bird thickly marked with rather broad reddish chestnut streaks there is a gradual variation, the streaks becoming fewer, narrower, and lighter until just discernible. The yellow of the under parts also grows appreciably paler; only 4 of the 18 show faint chestnut streaking on the back. Above yellowish olive green; some of those that are brighter colored below have the crown more or less ochraceous orange, but this color gradually darkens into the yellowish olive green of the back. In the remaining 14 males, those in which the chestnut streaks are almost entirely obsolete, the yellow of the underparts grows fainter and varies from gamboge yellow to clear straw yellow. Above there is no sign of streaks and the yellowish color gradually disappears giving place to dusky grayish, until the last which I would describe as dusky grayish olive green.

The 15 female examples show the same variations as noted in the males, only the brightest female is not as bright as the brightest male, and at the other end of the series they are duller above and somewhat paler below.

The first arrivals the present year were noted August 24.

(To be continued.)

THE SCOTERS (*OIDEZIA AMERICANA*, *O. DEGLANDI* AND *O. PERSPICILLATA*) IN NEW ENGLAND.

BY GEORGE H. MACKAY.

My experience on the coast of New England has shown that observations covering a series of years are necessary in order to arrive at any important conclusions respecting the habits and movements of the water birds during their passage along this